

# Testing the ppp theory-using regression analysis

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To carry out this test of comparative data from the United States Dollars and Japanese Yen in comparison with the UK Pounds, the test must follow a clear set of step by step plan. The Question of whether PPP theory was tested in the following three steps. The analysis was carried on a daily basis of for a total of 10 years. The interest rate difference data was taken for a period of seven years taking 1999 as base year. 1. The initial step and predominantly important step was to acquire the data required from Perfect Analysis for the periodic exchange rates of the British Pound and the Japanese Yen for the past 10 years.

These figures then were then placed in an Excel Spreadsheet and monthly figures were derived, eliminating all unnecessary dates were eliminated. Using Micro Soft Excel, the figures, the next task was to derive the percentage change in the exchange rates using the PPP formula stated: 2. Secondly once again using perfect analysis we then derived the relevant monthly interest rate difference figures between that United States and of the UK as well as Japan. As previously done these differences were placed in Excel and steps were taken to work out the inflation or deflation rates which are the changes in the index which have been calculated.

From that the inflation differential can be derived taking the US inflation rate and taking away the UK inflation rate as well as for US and Japanese rates.  $US (h) - UK (f)$  3. Once all the information was derived, Excel was used in order to calculate the percentage change between the US and UK as well as US and Japan inflation rate. Then PPP formula was used in order to calculate the differences in the inflation rates in both the countries. A regression analysis was carried out using Minitab.

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Two analysis were produced to show the correlation in the exchange rate fluctuations over the period of 10 years. Similarly a regression analysis was done in the Minitab to show the correlation of the interest rate difference during the period under consideration. " Regression Analysis is used to approximate quantitative functional relationships between dependant variables and one or more independent casual variables from actual data - experimental, time series, cross sectional - when the relationship among the variables is statistical in nature rather than exact.

By a statistical relationship it is meant that the dependant variable's observed values are generated by a probability distribution that is a function of other causal variables" Within this analysis the P value is the probability that the coefficient is Zero. The smaller the number the more significant it is. If the P value ranges between 5 and 10 percent the value is deemed to be nearly significant. The F score is in regard to the explanatory power of R-sq. This all tells you what combined explanatory power regression is and from how much is being explained and how much is not.

The T score is only of any significance when its value is greater than 1. 06. The co-efficient is a measure of how much a relationship two variables show based on a scale of -1 to +1. The figure shows the change in Y if the X variable was increased by 1. And finally the coefficient of determination R-Sq. It is measured of what is classified as a ' goodness of fit' of a particular regression model. R-Sq takes a value between -1 and +1. Negative values arise when the two variables are inversely related and positive values occur when they are correlated positively.